United Nations ST/SG/AC.10/C.3/2014/16

Secretariat

Distr.: General
24 March 2014

Original: English

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-fifth session
Geneva, 23 June – 2 July 2014
Item 6 (b) of the provisional agenda
Transport of gases: miscellaneous

Salvage pressure receptacles

Transmitted by the expert from Germany[1]

Introduction

1. The Sub-Committee decided at its thirty-seventh session in June 2010 (ST/SG/AC.10/C.3/74) to incorporate provisions on the use and approval of salvage pressure receptacles.

2. The provisions were discussed intensively on the basis of documents ST/SG/AC.10/C.3/2009/16/Rev.1 (Germany), informal documents INF.21 (United Kingdom) and INF.42 (CGA) of the thirty-sixth session and ST/SG/AC.10/C.3/2010/9 (Germany and United Kingdom) in a working group which met in parallel to the Sub-Committee. The report of the working group was presented as informal document INF.81. Due to the comments from industry the working group agreed to limit the water capacity of salvage pressure receptacles to 1 000 litres. This was a compromise to address some general concerns with regard to the inclusion of provisions on salvage pressure receptacles.

3. Therefore the original intention in document ST/SG/AC.10/C.3/2009/16/Rev.1 (Germany) of placing pressure drums and tubes up to 1000 Litres into salvage pressure receptacles was not met. In the meantime it became clear, that there is still a demand for larger salvage pressure receptacles.

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

4. The provisions exist for some time and positive experience with salvage pressure receptacles has been gained. The capacity limit should be re-considered and it is proposed to enlarge the size of salvage pressure receptacles at least to a size that enables to transport pressure receptacles of 1000 Litres volume.

Proposal

5. Change the reference to salvage pressure receptacles in the definition of pressure receptacles in 1.2.1 as follows:

> "*Salvage pressure receptacle* means a pressure receptacle with a water capacity not exceeding 43 000 litres into which are placed damaged, defective, leaking or non-conforming pressure receptacle(s) for the purpose of transport e.g. for recovery or disposal;".

6. Chance in 4.1.1.18 Use of salvage pressure receptacles as follows

> 4.1.1.18.2 Pressure receptacles shall be placed in salvage pressure receptacles of suitable size. The maximum size of the placed pressure receptacle is limited to a volume of 1000 litres as marked on the placed pressure receptacle. More than one pressure receptacle may be placed in the same salvage pressure receptacle, only if the contents are known and do not react dangerously with each other (see 4.1.1.6). In this case the total sum of volumes as given by the markings on the placed pressure receptacles shall not exceed 1000 litres. Measures shall be taken to prevent movement of the pressure receptacles within the salvage pressure receptacle e.g. by partitioning, securing and cushioning.

7. Paragraph 6.2.3.5: No change is necessary

8. Since current salvage pressure receptacles are not impacted, no transition period needed.

Justification

9. By enlarging the volume of salvage pressure receptacles it is ensured that pressure receptacles up to a total amount of volume of 1000 Litres can be stored and transported safely.

United Nations ST/SG/AC.10/C.3/2014/17

Secretariat

Distr.: General
24 March 2014

Original: English

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Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-fifth session
Geneva, 23 June – 2 July 2014
Item 7 (a) of the provisional agenda
Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: fuels in machinery or equipment

Fuels in engines and machinery

Submitted by the expert from Belgium and DGAC[1]

Introduction

1. During its forty-fourth session, the Sub-Committee discussed the issue of fuels in engines and machinery extensively (see ST/SG/AC.10/C.3/2013/67 (DGAC), informal documents INF.7 (DGAC), INF.59 (Belgium on behalf of the lunchtime working group) and decided the following:

(a) Prepare a proposal to introduce a new UN XXXX applicable to engines/machinery powered by flammable liquids/flammable gases/fuels cells. This new UN number should incorporate the provisions of SP 363;

(b) Develop a proposal to include appropriate hazard communication (e.g. flammability risk label, mention in transport document), linked to different quantity thresholds. The communication of "subsidiary risks" (e.g. when also lithium batteries are contained in the same machinery) should be the subject of a separate special provision, also depending on developments for hazard communication for lithium batteries

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

(c) Draft the necessary consequential amendments to various parts of the Regulations (definition of vehicles, SP 363, SP 301, SP 312, SP 240, ...). For this work, the working group highlighted the following items for consideration:

(i) Identification of the types of fuels (with different thresholds, different UN numbers, ...);

(ii) Distinguishing between vehicles (e.g. self-propelled) and machinery;

(iii) Fuels which are only environmentally hazardous;

(iv) Evaluation of the already developed modal provisions when drafting new text (e.g. IMDG SP 961 and SP 962, ICAO provisions for vehicles/machinery containing lithium batteries, ...);

(v) Ongoing work for classification and hazard communication in class 9.

2. In line with this work flow the expert from Belgium and DGAC propose that:

(a) The entry for UN 3166 ENGINE, INTERNAL COMBUSTION or VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED or ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or VEHICLE, FUEL CELL be limited to "vehicles" as defined in SP 240, meaning self-propelled apparatus designed to carry one or more persons or goods. This would result in the proper shipping name "ENGINE, INTERNAL COMBUSTION" being removed from this entry and covered in a new entry UN XXXX.

No limits on the amount of fuel in vehicle fuel tanks are proposed since this is currently the case for land mode regulations such as ADR and 49 CFR. It is anticipated that the modal authorities may impose limits. Consistent with other regulations the presence of other dangerous goods (e.g. batteries, air bags, fire extinguishers, compressed gas accumulators or safety devices necessary for the operation of the vehicle) would be permitted under the condition that they are part of the vehicle.

(b) A new entry UN XXXX is proposed for all internal combustion engines, machinery or equipment containing fuel. SP 363 would be applied to this entry to establish specific quantity thresholds (450 l, 1500 l) applicable to hazard communication requirements. Except for air transport, engines or equipment containing only a residual amount of fuel would not be subject to the regulations.

(c) UN 3363, Dangerous goods in machinery or apparatus would only be used for machinery, equipment or apparatus containing small quantities of dangerous goods as a residue or an integral element of the machinery or apparatus consistent with SP 301;

(d) SP 363 is to be deleted for the entries for fuels (e.g. UN 1202, UN 1203, etc). The text from SP 363 will be revised to be consistent with the proposal to apply it only to the new UN XXXX for all internal combustion engines, machinery or equipment containing fuel.

(e) A new SP YYY would be assigned to UN 3166 to clarify the meaning of "vehicles" consistent with the definition in SP 240 that currently applies to UN 3171, BATTERY-POWERED VEHICLE or BATTERY-POWERED EQUIPMENT.

(f) SP 312 is proposed to be revised so that it only addresses provisions for vehicles. The provisions for engines, equipment or machinery will reappear in the new SP XYZ;

(g) It is proposed to assign packing instruction P907 to UN XXXX. P907 will be amended to include engines but the general requirements of 4.1.1 applicable to UN 3363, remain only applicable to UN 3363, as certain of these provisions are not adequate for UN XXXX (e.g. 4.1.1.8, 4.1.1.15, etc.).

(h) Specific requirements for additional hazard communication (e.g. for machinery with internal combustion and lithium batteries) should be the subject of separate proposals pending on the ongoing work on hazard communication for articles in class 9. General requirements for additional dangerous goods are included in the proposal.

(i) No proposals are included to address fuels that are only environmentally hazardous since the authors believe that these could equally be assigned to the entries proposed in this paper that contain flammable liquids or other dangerous goods.

Proposal

3. Amend the proper shipping name of UN 3166 to read as follows:

UN 3166 ~~ENGINE, INTERNAL COMBUSTION or~~ VEHICLE, FLAMMABLE GAS POWERED or VEHICLE, FLAMMABLE LIQUID POWERED or ~~ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED~~ or VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED

4. Amend SP 312 to read as follows:

Vehicles ~~or machinery~~ powered by a fuel cell engine shall be consigned under the entries UN 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, ~~or UN 3166 ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED~~ as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.

Other vehicles which contain an internal combustion engine shall be consigned under the entries UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the batteries installed. Lithium batteries shall meet the requirements of 2.9.4.

5. Delete the reference to SP 363 in column (6) of the dangerous goods list for UN 3475, 1863, 1268, 1223, 1203, 1202.

6. Add a new SP YYY to UN 3166 as follows:

This entry applies to vehicles powered by flammable liquid or gas internal combustion engines or fuel cells. Hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal

batteries or lithium ion batteries, transported with the batteries installed shall be consigned under this entry. Vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries shall be consigned under the entry UN 3171. For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods of wheeled or tracked construction. Examples of such vehicles are cars, motorcycles, trucks, locomotives, scooters, three- and four-wheeled vehicles or motorcycles, lawn tractors, self-propelled farming and construction equipment, boats and aircraft or and any other self-propelled apparatus.

Dangerous goods such as batteries, air bags, fire extinguishers, compressed gas accumulators, safety devices and other integral components of the vehicle that are necessary for the operation of the vehicle or for the safety of its operator or passengers, must be securely installed in the vehicle and are not otherwise subject to these Model Regulations.

7. Amend P907 to read as follows:

P907	**PACKING INSTRUCTION**	P907
This Packing Instruction applies to UN 3363 and UN XXXX. If **the** *engine,* equipment, machinery or apparatus is constructed and designed so that the receptacles containing the dangerous goods are afforded adequate protection, an outer packaging is not required. **Dangerous** goods in *engines,* equipment, machinery or apparatus shall otherwise be packed in outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use, and meeting the applicable requirements of **4.1.1.1.** For Division 2.2 gases, the inner cylinder or receptacle, its contents and filling density shall be to the satisfaction of the **competent** authority of the country in which the cylinder or receptacle is filled. In **addition**, the manner in which receptacles are contained within the *engine,* equipment machinery or apparatus, shall be such that under normal conditions of transport, damage to receptacles containing the dangerous goods is unlikely; and in the event of damage to receptacles containing solid or liquid dangerous goods, no leakage of the dangerous goods from the *engine,* equipment, machinery or apparatus is possible (a leakproof liner may be used to satisfy this requirement). Receptacles containing dangerous goods shall be so installed, secured or cushioned as to prevent their breakage or leakage and so as to control their movement within the *engine,* equipment, machinery or apparatus during normal conditions of transport. Cushioning material shall not react dangerously with the content of the receptacles. Any leakage of the contents shall not substantially impair the protective properties of the cushioning material.		
Special packing provisions: **PP XX** *For UN 3363, r*eceptacles containing dangerous goods shall conform to the general provisions in 4.1.1, except that 4.1.1.3, 4.1.1.4, 4.1.1.12 and 4.1.1.14 do not apply.		

8. Assign PP XX to UN 3363 in column 9 of the dangerous goods list.

9. Insert a new UN number XXXX in the dangerous goods list as follows:

						Limited and excepted		*Packaging*		*Portable tanks and bulk containers*	
						quantities		*Packing instructions*	*Special packing provisions*	*Instructions*	*Special provisions*
UN No.	*Name and description*	*Class*	*Subsidiary risk*	*Packing group*	*Special provisions*						
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
XXXX	ENGINE, INTERNAL COMBUSTION or ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or EQUIPMENT, INTERNAL COMBUSTION or EQUIPMENT, FUEL CELL, FLAMMABLE GAS POWERED or EQIPMENT, FUEL CELL, FLAMMABLE LIQUID POWERED or MACHINERY, INTERNAL COMBUSTION or MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED or MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED	3			XYZ	0	E0	P907			

10. SP 363 shall read as follows:

SP 363

This entry applies to engines, equipment or machinery, powered by internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units, etc.), other than vehicles or those with small quantities of

dangerous goods as a residue or an integral element of the machinery or apparatus subject to special provision 301.

Engines, equipment or machinery may contain other dangerous goods required for their functioning or safe operation (e.g. batteries, fire extinguishers, compressed gas accumulators or safety devices) if they are part of the original design type.

An engine, equipment or machinery may be considered as not containing fuel and not subject to these Model Regulations when the components, means of containment including any fuel lines have been completely drained, sufficiently cleaned of residue, and purged of vapours to remove any potential hazard.

The engine, equipment or machinery are not subject to any other requirements of these Model Regulations if the following requirements are met:

(a) The engine, equipment or machinery, including the means of containment containing dangerous goods, shall be in compliance with the construction requirements specified by the competent authority;

(b) Any valves or openings (e.g. venting devices) shall be closed during transport;

(c) The engine, equipment or machinery shall be oriented to prevent inadvertent leakage of dangerous goods and secured by means capable of restraining the engine, equipment or machinery to prevent any movement during transport which would change the orientation or cause it to be damaged;

(d) Where the engine, equipment or machinery contains not more than 450 liters of dangerous goods, the labelling requirements of 5.2.2 shall apply and where there is more than 450 liters but not more than 1,500 liters the engine, equipment or machinery shall be labelled on all four external sides in accordance with 5.2.2;

(e) Where the means of containment contains more than 1500 liters, the engine, equipment or machinery shall be placarded on all four external sides in accordance with 5.3.1.1.2; and

(f) A transport document in accordance with 5.4 is required where the means of containment has a capacity greater than 1500 liters.

United Nations ST/SG/AC.10/C.3/2014/18

Secretariat

Distr.: General
25 March 2014

Original: English

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-fifth session
Geneva, 23 June- 2 July 2014
Item 5 (e) of the provisional agenda
Electric storage systems: miscellaneous

Lithium batteries – appropriate hazard communication

Transmitted by the expert from the United Kingdom[1]

Introduction

1. Following discussion of ICAO's papers ST/SG/C.10/C.3/2013/49 and informal document INF 48 at the forty-fourth session, a lunchtime working group, chaired by the Vice-Chairman, met to consider the issue of appropriate hazard communication for lithium metal and ion batteries (UN numbers 3090, 3091, 3480 and 3481).

2. The conclusions of the working group were reported in INF 54, which set out three possible options for a way forward:

- Do not change the current regulation, but use existing rules to meet the needs of the air mode;
- Do not change Class 9, but define a specific hazard communication symbol that would be more appropriate for lithium batteries (and may be extended to other goods of Class 9);
- Adopt various divisions under Class 9, in accordance with the hazard characteristics of individual groups of articles.

3. The working group recommended a multistep approach starting with the concepts subsumed in option 2:

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

- Prepare a proposal for labels for lithium batteries that will characterise specific hazards under Class 9 in accordance with the type of goods (analogous to Class 7 labels);
- Evaluate the way the current marking system will integrate the proposals;
- After a definition of the content of the label, propose a design for the label while considering what kind of hazard characteristics would be represented;
- Co-ordinate this work with other work on including articles under Class 9.

4. This approach was endorsed by plenary, which also noted that ICAO's International Multidisciplinary Lithium Battery Transport Coordination (IMLBC) group would be holding a further meeting to discuss the carriage of lithium batteries in February 2014. That meeting subsequently resulted in four recommendations:

- Further restrict the carriage of lithium metal batteries on passenger aircraft;
- Develop permissions to transport batteries on passenger aircraft based on performance (reaction of the battery and performance of the packaging in a thermal runaway situation)
- Mitigate risks for transport on cargo aircraft based on the above performance criteria; and
- Adopt a multidisciplinary approach involving all stakeholders to advance cargo safety.

The first three of the ICAO recommendations are clearly mode specific. Work done by the Sub-Committee of experts on the Transport of Dangerous Goods could assist with the last.

5. The current paper therefore considers the specific issue of alerting participants in the transport chain to the hazards associated with lithium cells and batteries, in the context of a scheme which could be extended to other Class 9 substances and articles.

6. The subdivisions of substances and articles in Class 9 are set out at point 2.9.2 of the Model Regulations. Most are associated with an identified hazard - for instance, *substances which, on inhalation as fine dust, may endanger health*. Others simply name articles (*lithium batteries, lifesaving appliances*) without giving details of the type of the (sometimes multiple) dangers they may represent.

7. The existing lithium battery handling label used by air transport shows that:

(a) The package contains lithium batteries;

(b) The batteries are fragile/should be handled with care; and

(c) There is a flammability hazard if damaged.

Figure 1

ICAO's ILBTC meeting also identified fire as the major hazard.

8. Under the Model Regulations, requirements for the transport of lithium batteries are detailed at 2.9.4, and in P903/LP903. 2.9.4 indicates the possibility of 'violent rupture' and 'dangerous reverse current flow'. P903/LP903 refer to dangerous evolution of heat. Both note the need for measures to prevent short circuit.

9. Three Special Provisions in the Model Regulations are also relevant:

- SP 188, which sets out conditions for exemption, requires marks giving exactly the same information as the ICAO label (including a contact telephone number) on packages containing lithium cells or batteries. It refers to the possibility of a dangerous evolution of heat.
- Special Provision 376 deals with damaged or defective lithium batteries and refers to a number of possible hazards:

  Cells and batteries liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours…

  It requires application of P908/LP904, which note possible hazards as the release of electrolyte (UN numbers 2796 and 2798, both Class 8 corrosives), dangerous evolution of heat and short circuit.
- Special Provision 377 deals with disposal or recycling and requires application of PP909, which also refers to dangerous evolution of heat and short circuit.

10. The Model Regulations therefore recognises the main hazard represented by lithium batteries as flammability (associated with short circuit), with a number of other possible risks, including explosivity, toxicity and corrosivity. None of these hazards are made apparent by the Class 9 label.

11. The working group suggested that a system for indicating Class 9 hazards might be developed by analogy with the Class 7 provisions. The four labels associated with Class 7 are illustrated below:

Label 7A Label 7B

Label 7C Label 7E

Figure 2

Except for 7E, these indicate different degrees of danger associated with a common hazard rather than disparate risks, and are not therefore directly analogous with the diverse range within Class 9. They also use English text, which is not ideal when transport may be across linguistic boundaries. However, as a system of alternative labels not linked to a separate Division or Class and as a design concept - general information in the top half of the label with more specific information in the lower half - these may well provide a way forward.

12. The most obvious alternative to this would be a two label system, the general Class 9 label with a variant of the ICAO handling label alongside, essentially the system currently in use for environmentally hazardous substances and elevated temperature substances:

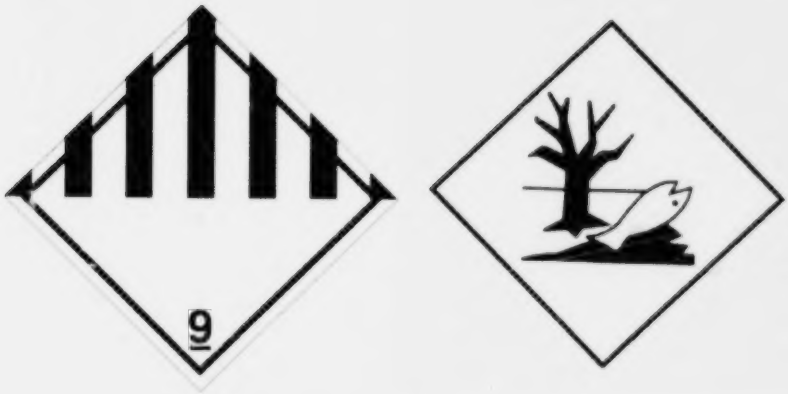


Figure 3

13. The four options for either a one or two label system would be to indicate that lithium batteries are being carried and:

(i) There is a flammability hazard;

(ii) There is a flammability hazard if they are damaged;

(iii) There are multiple associated hazards; or

(iv) There are multiple hazards if they are damaged.

14. The first option is obviously the closest to current practice under the Model Regulations, but would mean that participants in the supply chain would only be aware of subsidiary risks through training. (According to how the presence of batteries was indicated, the contents of the consignment might also only be obvious after training.)

15. The general introduction to the Model Regulations specifies that:

The labelling system is based on the classification of dangerous goods and was established with the following aims in mind:

(a) To make dangerous goods easily recognisable from a distance by the general appearance (symbol, colour and shape) of the labels they bear;

(b) To provide, by means of colours on the labels, a useful first guide for handling, stowage and segregation.

Bearing these points in mind, some possible labels/placards are detailed below.

16. With a fire hazard, suitable combination formats would include:

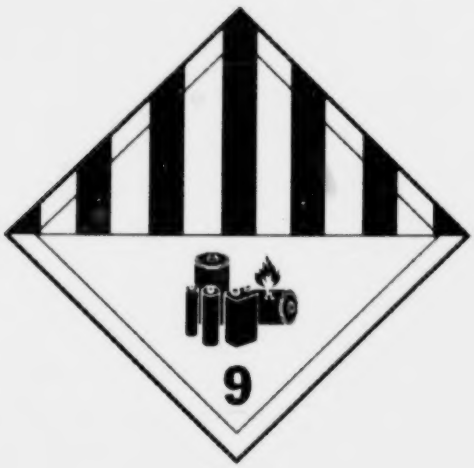


Figure 4

Figure 5

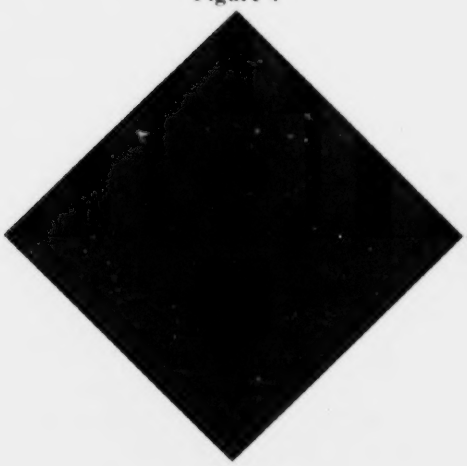


Figure 6

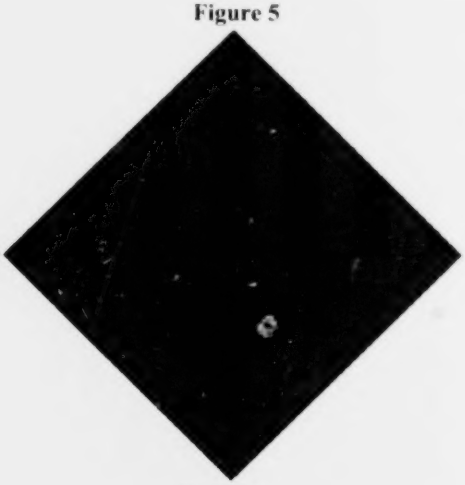


Figure 7

(removing damaged element)
or, as an example of a two label system:

Figure 8

It would also be possible to incorporate other hazards, such as corrosivity or explosivity in a pictogram:

Figure 9

Figure 10

17. Finally, a different approach could also be adopted by using a strip of images with no language content, to be displayed adjacent to the Class 9 label, as below:

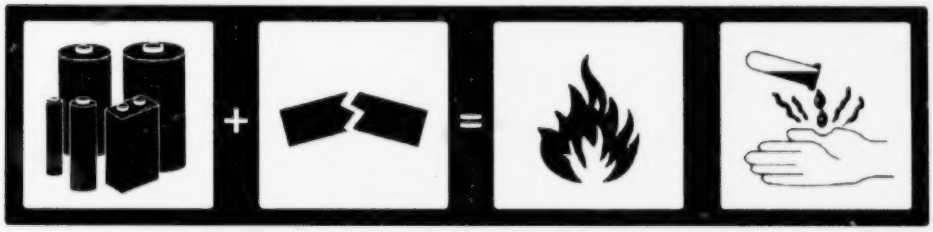


Figure.11

18. If a new, combination label were adopted, industry would require a transition period in order to use all or most existing stocks, although this would have lower cost implications in the long run. A secondary label could be introduced more quickly. Indeed, in a first phase and perhaps for longer, either display option could be deemed acceptable. As the suggested pictograms include the same hazard warning elements as the ICAO label and are essentially self-explanatory, only minimal extra training would be required.

19. If the general concept is accepted, it would be possible to extend this to at least some other groups of substances/articles in Class 9. This might be considered as a work item for the next biennium. Labels could be in line with any of the models shown above, e.g.:

Figure 12 – EHS

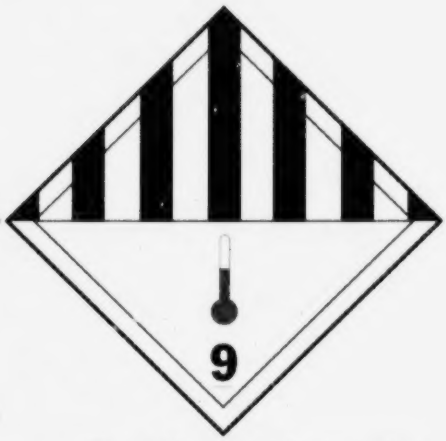


Figure 13 – elevated temperature

Proposals

20. In order to assist the Sub-Committee to reach conclusions, textual amendments to apply the options identified are set out below.

Option 1

(Labels indicating that lithium batteries are being transported and have a flammability hazard, but not associating the hazard with damage – no exemptions)

(i) In the Dangerous Goods List in Chapter 3.2, add Special Provision XXX against the following UN numbers in column (6): 3090, 3091, 3480 and 3481

(ii) At 3.3.1, Special Provision 188, add the following:

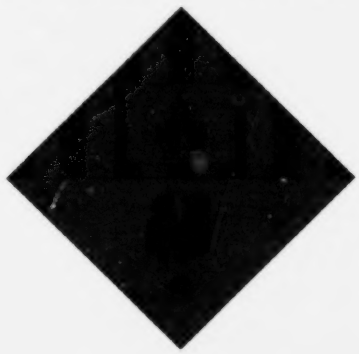
- Delete (f) (ii) and renumber points (iii) and (iv)
- Add the following:

"(j) The class 9 label No. 9L is displayed, see 5.2.2.2.2."

(iii) At 3.3.1, add a new Special Provision XXX, to read:

"The class 9 label to be used is No. 9L, see 5.2.2.2.2."

(iv) At 5.2.2.2.2, under CLASS 9, add the following:



(No.9L)

Symbol (seven vertical black stripes in upper half with flame symbol); black or white

Background: red;

Symbol (batteries): black or white on red"

Option 2

(Labels indicating that lithium batteries are being transported and have a flammability or possibly multiple hazards, associated with damage to the batteries – no exemptions)

(i) In the Dangerous Goods List in Chapter 3.2, add Special Provision XXX against the following UN numbers in column (6): 3090, 3091, 3480 and 3481

(ii) At 3.3.1, Special Provision188:

- delete (f) (ii) and renumber points (iii) and (iv)
- add the following:

"(j) The class 9 label No. 9L is displayed, see 5.2.2.2.2."

(iii) At 3.3.1, add a new Special Provision XXX, to read:

"The class 9 label to be used is No. 9L, see 5.2.2.2.2."

(iv) At 5.2.2.2.2, under CLASS 9 , add the following:

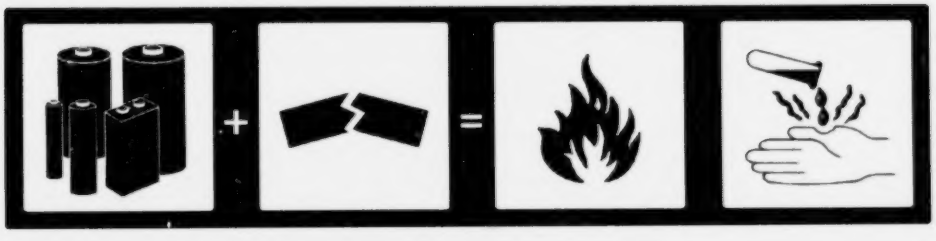
"(No.9L)

Symbol (seven vertical black stripes in upper half); black or white

Background: red;

Symbol (batteries with flame (and explosion)): black or white on red"

or



(No.9L)

Symbol (batteries plus broken battery equals flammability, explosive, corrosive hazards) black on white"

Option 3

(As Options 1 or 2, but as a separate mark to appear alongside the Class 9 label.)

(i) At 3.3.1, Special Provision188:

- delete (f) (ii) and renumber points (iii) and (iv)
- add the following:

"(j) The lithium battery mark is displayed, see 5.2.1.6.3."

ii) Rename 5.2.1.6 as Special marking provisions for goods of Class 9

iii) Insert a new 5.2.1.6.1, 2 and 3 as follows (in order to keep the Class 9 entries in the same order as at 2.9.2.):

"5.2.1.6.1 Packages containing lithium batteries meeting the criteria of 2.9.4 shall be durably marked with the lithium battery hazard mark shown in 5.2.1.6.3.

5.2.1.6.2 The lithium battery mark shall be located adjacent to the marks required by the appropriate provisions of 5.2.1.1. The requirements of 5.2.1.2 and 5.2.1.4 shall be met.

5.2.1.6.3 The lithium battery mark shall be as shown in Figure 5.2.2.

Figure 5.2.2

The mark shall be in the form of a square set at an angle of 45 degrees (diamond shaped.) The symbol (group of batteries, one damaged, with flame) shall be black on white or suitable contrasting background. The dimensions shall be 100mm x 100mm and the minimum width of the line forming the diamond shall be 2mm. If the size of the package so requires, the dimensions/line thickness may be reduced, provided the marking remains clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

***NOTE**: The labelling provisions of 5.2.2 apply in addition to any requirement for packages to bear the lithium battery mark.* "

(iv) Renumber the existing paragraphs from current 5.2.1.6.1 to the end of the Chapter.

(v) Renumber Figure 5.2.2 and the corresponding references to 'Figure 5XX'

(vi) At 5.3.2.3 replace "*Environmentally hazardous substance mark*" with "*Lithium battery mark*"

(vii) Replace existing 5.3.2.3.1 and 2 with the following:

"5.3.2.3.1 A cargo transport unit containing lithium batteries meeting the criteria of 2.9.4 (UN Numbers 3090, 3091, 3480 and 3481) shall be marked on at least two opposing sides of the unit and in any case in such a position as may be seen by all those involved in the loading or unloading processes, with the lithium battery mark to be affixed in accordance with the provisions of 5.3.1.1.4 for placards.

5.3.2.3.2 The lithium battery mark for cargo transport units shall be as described in 5.2.1.6.3 and Figure 5.2.2, except that the minimum dimensions shall be 250mm x 250mm."

(viii) Renumber existing 5.3.2.3. – 5.3.2.3.2 as 5.3.2.4 -5.3.2.4.2.

United Nations ST/SG/AC.10/C.3/2014/19

Secretariat

Distr.: General
26 March 2014

Original: English

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-fifth session
Geneva, 23 June – 2 July 2014
Item 7 (g) of the provisional agenda
Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: packagings

Use of large salvage packagings

Transmitted by the expert from Germany[1]

Background

1. Provisions on large salvage packagings have been incorporated in the eighteenth revision of the revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations. The Sub-Committee agreed to a definition and amendments to chapter 6.6 on the basis of document ST/SG/AC.10/C.3/2011/24 (Belgium and Germany).

2. In the meantime the expert from Germany noted that consequential amendments to the provisions concerning the use of large salvage packaging were omitted. This was brought to the attention of the RID/ADR/ADN Joint Meeting which met in Bern from 17 to 21 March 2014 with informal document INF. 18. The proposed text was adopted for the ADR/RID/ADN 2015.

3. It is proposed to adopt the same text for the United Nations Model Regulations. If possible, the amendment should be incorporated in a correction to the eighteenth edition of the Model Regulations in order to enable also other modal bodies to apply the provisions from 2015.

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

Proposal

4. Amend 4.1.1.18 as follows:

"**4.1.1.18** Use of salvage packagings **and large salvage packagings**

4.1.1.18.1 Damaged, defective, leaking or non-conforming packages, or dangerous goods that have spilled or leaked may be carried in salvage packagings mentioned in 6.1.5.1.11 **and in large salvage packagings mentioned in 6.6.5.1.9**. This does not prevent the use of a bigger size packaging**, including Intermediate Bulk Container (IBC) or large packaging** of appropriate type and performance level under the conditions of 4.1.1.18.2 and 4.1.1.18.3.

4.1.1.18.2 Appropriate measures shall be taken to prevent excessive movement of the dam-aged or leaking packages within a salvage packaging **or large salvage packaging**. When the salvage packaging **or large salvage packaging** contains liquids, sufficient inert absorbent material shall be added to eliminate the presence of free liquid.

4.1.1.18.3 Appropriate measures shall be taken to ensure that there is no dangerous build up of pressure."